## REMARKS

**Restriction Requirement**

The applicants acknowledge the finality of the Examiner's restriction requirement and their election to prosecute claims 8-12 of Group II of the restriction requirement.

**Claim Objections and §112 Rejection**

Claims 8 and 12 are amended in response to the Examiner's objections to these claims and the §112 rejection. It is submitted that these amendments address the Examiner's concerns over any informalities and indefiniteness of the claims.

Concerning the Examiner's comments on the use in claim 10 of the term "XRD-amorphous," the applicants respectfully submit that the usage of such terminology and, otherwise, the language of claim 10, is clearly understandable, especially, in view of the teachings within the applicants' specification. For instance, the text of the published specification at paragraphs [0072]-[0073], [0090]-[0098], [0107], [0119], [0130], [0163] and elsewhere provides definitions and discussion that indicate what is meant by the term XRD-amorphous.

**§102(b)/103 Rejection of claims 8-12 over US 4,408,067 to Nakamura et al.**

The Examiner has rejected claims 8-12 over Nakamura et al. and argues that this patent inherently discloses the applicants' claimed catalyst prepared by the recited co-precipitation process, even though, the catalyst disclosed in the Nakamura et al. patent is not made by the same process as is the applicants' catalyst. The applicants submit, however, that not only does the Nakamura et al. patent not inherently disclose the applicants' catalyst, but, also, the catalyst that is explicitly taught by the Nakamura et al. patent is clearly a different catalyst from the applicants' catalyst.

The Nakamura et al. patent discloses a catalyst having the empirical formula $Ti_aMe_bX_cO_d$, wherein Me represents at least one element selected from the group consisting of Cu, Ag, Au, Mg, Zn, Sn, Pb, Zr, V, Bi, Cr, W, Mo, Mn, Fe, Co, and Ni; X represents at least one element selected from the group consisting of Si and Sb; and the subscripts a, b, c, and d designate the atomic ratio and when a is 1, b is 0.01 to 12, c is 0 to 12, b+c is 0.01 to 12, and d is the oxygen content of the catalyst formed by the combination of the above components. *See e.g.*, column 2,

line 34-44 and claim 1. It is noted that titanium is a required component of the Nakamura et al. catalyst. *See, e.g.*, column 2, lines 47-57. It is also noted that Table 1 presents exemplified catalysts of the Nakamura et al. invention of which none of the listed compositions contain both a Group VI metal (Cr, Mo, and W) component and a non-noble Group VIII metal (Fe, Co, Ni) component, and all of the listed compositions include a titanium component. *See* columns 7-8.

The catalyst composition of the applicants' claim 8 is defined as having the general formula of $X_bM_cZ_dO_e$, wherein X is a non-noble Group VIII metal (Fe, Co, Ni), M is a Group VIb metal (Cr, Mo, W), Z is selected from Al, Si, Mg, Ti, Zr, B, and Zn, and O is oxygen. *See e.g.*, the published application at paragraphs [0013]-[0020] and claim 8. The element represented by Z together with a portion of the oxygen component is derived from the refractory inorganic oxide starting material. *See* paragraph [0045]. An amount of refractory oxide material used in the preparation of the claimed catalyst is in the range of from 15 to 40 wt %. *See* paragraphs [0051]-[0052] and claim 8.

The Nakamura et al. patent does not disclose or teach applicants' claimed composition. The Nakamura et al. catalyst requires the presence of titanium, whereas, on the otherhand, the applicants' composition does not require the presence of titanium. The applicants' composition requires the presence of both a Group VIII metal and a Group VIb metal, whereas, on the otherhand, the Nakamura et al. catalyst does not require the presence of both of these elements. Also, the applicants' claimed composition is prepared using an amount of refractory oxide material in the range of from 15 to 40 wt% that is co-precipitated with Group VIII and Group VIb metal compounds. And, as the Examiner has noted, this co-precipitation is not taught by the Nakamura et al. patent, thus, clearly, neither is the amount of refractory oxide material that is recited in the applicants' claims taught by the Nakamura et al. patent.

In view of the above-noted differences and others, it is clear that the applicants' claimed composition is different from the catalyst of the Nakamura et al. patent. But, moreover, the product-by-process aspects of the claimed composition provide further distinctions in that the resulting composition is clearly different from any composition that is disclosed or taught by the Nakamura et al. patent. As noted in the applicants specification, their composition is particularly useful in hydroprocessing reactions. *See e.g.*, the published application at paragraphs [0001], [0029] and Examples 2 and 12. On the otherhand, however, the Nakamura et al. catalyst is used

in reacting a nitrile, water and alcohol to produce an ester compound. *See* the patent at column 1, lines 12-19; column 2, lines 12-19; column 4, lines 5-43, and Tables 1 & 2 of the Examples.

It is further noted by the applicants that the method of preparing their co-precipitated catalyst composition has an effect on its catalytic activity. *See* the published application at paragraphs [0024]-[0025]. The applicants also present in their specification a theory as to why the co-precipitated catalyst composition has exceptional activity over other compositions. *See* the published application at paragraphs [0088]-[0089]. Another distinction is that the applicants' preferred composition is one which is substantially XRD-amorphous, and, throughout their specification, including the examples and figures thereof, there is presented information concerning the XRD patterns of the inventive and comparative compositions. It is, thus, clear from the specification that the claimed composition has unique properties that are attributable to the manner by which it is made.

Concerning the Examiner's assertion that the Nakamura et al. patent inherently discloses the XRD pattern of claims 10-11, the applicants respectfully submit that this is not the case. As noted above, the Nakamura et al. patent fails to teach the applicants' claimed catalyst composition or the recited co-precipitation method. But, moreover, in making any inherency argument, an examiner must provide objective evidence or cogent technical reasoning to support such a conclusion in order for the argument to be proper. *See* MPEP §2112. The Examiner has not done this. No evidence has been presented to support the Examiner's conclusion of an inherent disclosure of the applicants' composition.

**Conclusion**

In view of the above remarks, it is submitted that claims 8-12 that are currently under examination are patentable over the prior art. Thus, allowance thereof is respectfully requested.

Respectfully submitted,

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